



STANFORD RESEARCH INSTITUTE

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May 28, 1968

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Plus additional persons on attached attendance list

A one day meeting of the ARPA Computer Network Working Group met Friday, May 24, 1968, in Boelter Hall, UCLA, Los Angeles. In attendance were those persons named in the attached list. The agenda covered the six topics discussed below.

1. Review of the network schedule

It was estimated that the IMP contractor would be chosen in approximately July 1968, and that the IMPs would be installed at the sites of the four initial network nodes (UCLA, UCSB, UTAH, SRI) by approximately April 1969.

2. Review of the simulation effort

A description was given of the network simulator being written by UCLA. The simulator, being written in GPSS, consists of eight blocks: Initialization, Traffic Generation, Host to IMP Routine, CPU Routine, Communication Channel, Routing, Channel Errors, and IMP to Host Data Transfer. At the present time only the Traffic Generation block has been completed. Progress has been slowed due to the academic year-end work load. It was estimated that the complete simulation might be first run by mid-June 1968. Only after debugging is completed and after the 360/75 is moved, is the actual simulator use anticipated - the target time is late July 1968.

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3. Familiarization with the host systems of the initial network

Very short descriptions were given of each host - a Univac 1108 at UTAH, two SDS 940s at SRI, an SDS Sigma 7 possibly with an IBM 360/75 at UCLA, and an IBM 360/30 at UCSB. Both teletypewriter and CRT type terminals are or will be in operation at all locations.

4. Identification of major problem areas

Three major objectives for the Working Group's efforts were discussed and appeared to be acceptable. These objectives were a) solving those host to host communication problems necessary to achieve a working network, b) active participation in the debugging of the initial network, and c) interacting with the IMP contractor, through the auspices of ARPA, mutually monitoring and advising each other.

Attention needed to be devoted to the areas of host to host communication, host-IMP communication, and the host-IMP hardware interface. The present focus was directed to the area of host to host communication, with activity in the latter areas being deferred until the IMP contractor is chosen and ready.

A target time of October 1969, (six months after the assumed April 1969 IMP installation) was arbitrarily chosen for planning purposes. It was decided that the efforts of the group should be directed toward providing the capability for any user from his console to operate a variety of interactive programs at other hosts. Major differences were found to exist in the character sets, character codes, command structures, and operating procedures even among hosts of the initial network. These differences applied to teletypewriter terminals, CRT terminals, textual material, and graphical material.

It was felt, at this time, it would be a major achievement if a user, from his console, via the network, could operate any interactive program available to network users, at any host. The user would be responsible for executing the login, logout, and program commands required by the remote host. The movement of files between hosts might be very restricted or not possible in some cases. The remote storage of user files would depend upon the capability of the individual hosts.

5. Assignment of tasks

Each site will proceed to -

- a) select for analysis one (or more if possible) "typical" interactive system that it plans to offer to network users,

- b) define the character set and character codes this system would prefer to manipulate in input and output operations
- c) define the formats of the input and output "messages" this system would prefer to deal with, and
- d) define the behavior of this system as it would appear to the network user.

The emphasis on these analyses would be on textual material. It was deemed desirable, if possible, for these analyses to encompass graphical processes too.

A secondary area each site will examine, as it feels appropriate to its own situation, the following topics:

- a) estimates of manpower, time, and costs required to achieve the level of capability being assumed here,
- b) problems associated with accounting for host time use by the network, and
- c) possible schedules of time the host could be available to network use.

6. Working arrangements with other network members

It was agreed that the efforts of the group were to be consciously directed to the development of techniques and problem solutions that would have network-wide applications. Effort was not to be directed so as to cause the initial network to form a closed community.

The inclusion of the IMP contractor as a member of the working group was felt to be desirable.

Means of assuring adequate communication with other network members couldn't be worked out at this time. Present plans call for all documents used or generated by the working group to be made available to the Network Information Center (NIC). Access to the NIC should be possible for any network member. Contact by members of the working group with other network members should also occur on a continuing basis.

LIST OF ATTENDEES, MEETING OF APRIL 24, 1968

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